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EXAMINER	
GRASER, JENNIFER E	
ART UNIT	**PAPER NUMBER**
1645	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/049,704	COLACO, CAMILO ANTHONY LEO SELWYN	
	Examiner	Art Unit	
	Jennifer E. Graser	1645	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 December 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15* is/are pending in the application.

4a) Of the above claim(s) *1-9 and 15* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *10-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office Action.

Acknowledgment and entry of the Amendment submitted on 12/6/04 is made. Claims 10-14 are currently under examination.

Claim Rejections - 35 USC § 112

1. Claims 1-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 10 is vague and indefinite because due to the phrase "derived from the heat treatment of an extracellular pathogenic organism". It is unclear what is encompassed by the phrase "extracellular pathogenic organism". The specification defines "extracellular pathogenic organism" to mean "any pathogen that causes a disease in a vertebrate, including bacterial, prokaryotic, protozoa and fungal species". There are bacteria which are intracellular so this definition is confusing. U.S. Patent No. 5,961,979 defines "intracellular pathogen" to mean "any viable organism, including, but not limited to viruses, bacteria, fungi, protozoa and intracellular parasites...". Further, the Patent defines "Mycobacteria sp.", mycoplasma, and trypansoma" as intracellular bacteria. See Column 12, lines 40-50 of US Patent Nos. 5,961,979. "Mycobacteria, mycoplasm and trypansoma are listed as some of Applicant's preferred embodiments of 'extracellular pathogenic organisms" which is contradictory to the definition in US Patent No. 5,961,979. Where applicant acts as his or her own lexicographer to specifically

define a term of a claim contrary to its ordinary meaning, the written description must clearly redefine the claim term and set forth the uncommon definition so as to put one reasonably skilled in the art on notice that the applicant intended to so redefine that claim term. *Process Control Corp. v. HydReclaim Corp.*, 190 F.3d 1350, 1357, 52 USPQ2d 1029, 1033 (Fed. Cir. 1999). As demonstrated by the prior art, the term "extracellular pathogenic organism" is indefinite because the specification does not clearly redefine the term. The term "extracellular pathogenic organism" is a critical limitation. While the specification can be used to provide definitive support, the claims are not read in a vacuum. Rather, the claim must be definite and complete in and of itself. Limitations from the specification will not be read into the claims. The claims as they stand are incomplete and fail to provide adequate structural properties to allow for one to identify what is being claimed. Further, as stated in the scope of enablement rejection below, the specification fails to teach or suggest any heat shock proteins from a microorganism other than those from a bacteria, a virus or a parasite (T.cruzi). Correction is required.

Response to Applicants' arguments:

Applicants argue that the term 'extracellular pathogen' includes extracellular bacteria, extracellular protozoa, extracellular parasites and fungi. They argue that the skilled artisan would be aware that some bacteria and protozoa are intracellular and, therefore, a skilled artisan would be able to identify these pathogens are being outside of the definition provided for in 'an extracellular pathogen'. This has been fully and carefully considered but is not deemed persuasive. As stated previously, The

specification defines "extracellular pathogenic organism" to mean "any pathogen that causes a disease in a vertebrate, including bacterial, prokaryotic, protozoa and fungal species". There are bacteria which are intracellular so this definition is confusing. This definition is not limited to extracellular bacteria or protozoa because it recites "***any*** pathogen that causes a disease in a vertebrate, including bacterial, prokaryotic, protozoa and fungal species". U.S. Patent No. 5,961,979 defines "intracellular pathogen" to mean "any viable organism, including, but not limited to viruses, bacteria, fungi, protozoa and intracellular parasites...". Further, the Patent defines "Mycobacteria sp.", mycoplasma, and trypansoma" as intracellular bacteria. See Column 12, lines 40-50 of US Patent Nos. 5,961,979. "Mycobacteria, mycoplasm and trypansoma are listed as some of Applicant's preferred embodiments of 'extracellular pathogenic organisms" which is contradictory to the definition in US Patent No. 5,961,979. Clearly, there is confusion regarding this terminology and the definition in the specification which includes organisms defined as intracellular in the art under the category 'extracellular' leads to even more confusion. Where applicant acts as his or her own lexicographer to specifically define a term of a claim contrary to its ordinary meaning, the written description must clearly redefine the claim term and set forth the uncommon definition so as to put one reasonably skilled in the art on notice that the applicant intended to so redefine that claim term. *Process Control Corp. v. HydReclaim Corp.*, 190 F.3d 1350, 1357, 52 USPQ2d 1029, 1033 (Fed. Cir. 1999). As demonstrated by the prior art, the term "extracellular pathogenic organism" is indefinite because the specification does not clearly redefine the term.

Claim 10 is vague and indefinite due to the use of the term "immunogenic determinant". The term is generally used in the art to refer to a specific epitope, i.e., a single determinant. The instant claim is drawn to a composition which has more than one antigenic determinant so the use of the term is contradictory to the art accepted meaning. It is suggested that Applicants amend the claims to "A vaccine composition comprising one or more complexes between a heat shock protein and an antigenic peptide fragment wherein said complex or complexes are obtained from the heat treatment of a bacteria or parasite". As stated in the scope of enablement rejection below, the specification fails to teach or suggest any heat shock proteins from a microorganism other than those from a bacteria, a virus or a parasite (T.cruzi). Applicants did not address this rejection.

Claim 13 is vague and indefinite because it is unclear how the complex could be aqueous. Do applicants intend for the complex to be in a pharmaceutically acceptable solutions, such as PBS? Applicants stated that that the complex is not aqueous, but rather the medium is aqueous. This has been carefully considered but the claim still recites "the composition **is an aqueous composition**". No medium is recited. Since the composition of claim 10 only recites a heat shock protein and an antigenic peptide it is unclear how this composition is aqueous. These components, e.g., protein and peptide, are not liquid. Correction is required.

Claim 14 is vague and indefinite because it still does not recite what is being treated. The method is for treating an animal, but does not say for what condition. The amendment does not solve the problem, but merely recites what is being used to treat

the animal, e.g, a vaccine directed to an extracellular pathogenic organism. This is not a condition.

Newly amended claim 11 is vague and indefinite because it is unclear what is encompassed by the term "stress-inducing stimuli". The vaccine of claim 10 specifically recites 'heat treatment'. If this is not heat-treatment, what is the stimuli? This is a critical limitation for the production of the vaccine. While the specification can be used to provide definitive support, the claims are not read in a vacuum. Rather, the claim must be definite and complete in and of itself. Limitations from the specification will not be read into the claims. The claims as they stand are incomplete and fail to provide adequate structural properties to allow for one to identify what is being claimed.

Additionally, claim 1 is vague and indefinite because it is unclear if the 'stress-induced products' in line 5 of the claim are the same as the 'stressprotein/antigenic peptide fragment complexes' recited in line 4. If they are the same, the same terminology, e.g., the 'stressprotein/antigenic peptide fragment complexes', should be used. Claim 11 also lacks antecedent basis for 'the immunogenic determinant' in line 6. Additionally, the last two lines of the claim are improper because the claim is a product-by-process claim, but the claim does not end in the product recited in the preamble. Rather, the claim ends with a production to used in 'preparation' of the vaccine. This is not a proper product-by-process claim. Correction is required.

Claim Rejections - 35 USC § 112-Scope of Enablement

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the

art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 10-14 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for "a vaccine composition comprising one or more complexes between a heat shock protein and an antigenic peptide fragment, wherein said one or more complexes are obtained from the heat treatment of a bacteria" and 'methods of treating bacterial infection ins an animal using said vaccine', does not reasonably provide enablement for "a vaccine composition comprising an immunogenic determinant, wherein the immunogenic determinant comprises one or more complexes between a heat shock protein and an antigenic peptide fragment derived from the heat treatment of an extracellular pathogenic organism", i.e., wherein the complex may be derived from any prokaryotic, protozoa and fungal species, or for 'methods of treating an animal through the use of said vaccines'. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention commensurate in scope with these claims.

The instant specification has adequately described and provided method results and challenge experiments with vaccines comprising one or more complexes between a heat shock protein and an antigenic peptide fragment derived from the heat treatment of a bacteria. Example 1 of the instant specification teaches obtaining such complexes from *Mycobacterium bovis* and Example 2 provides challenge experiments in rabbits showing that said complexes can confer protection to said rabbits. Example 3 shows similar results with the use of heat shock/peptide complexes from *M.tuberculosis.* Example 4 shows that HSP complexes form *E.coli* and *Salmonella typhimurium* were

also able to generate good immune responses. However, these are all bacterial HSPs and the results are solely directed to treating/preventing bacterial diseases. The claims are broadly drawn to vaccines comprising HSP complexes from any prokaryotic, protozoa and fungal species and for methods of treating an animal through the use of said vaccines. However, the instant specification provides no description of HSP complexes from fungi other than a generic description. The only HSP complexes taught from a parasite are those from *T.cruzi.* Additionally, no results or methods are provided for any HSP vaccines other than those derived from bacteria. Bacterial infection is very different from infections caused by protozoa and fungal species. The microorganism vaccine art is highly unpredictable. The results do not directly correlate from one species to another much less to Genus or unrelated organisms. The specification is not enabled for vaccines/methods containing/using HSPs other than those derived from the heat treatment of bacteria. Genentech Inc. v. Novo Nordisk A/S (CAFC) 42 USPQ2d 1001 clearly states: "Patent protection is granted in return for an enabling disclosure of an invention, not for vague intimations of general ideas that may or may not be workable. See Brenner v. Manson, 383 U.S. 519, 536, 148 USPQ 689, 696 (1966) (stating, in context of the utility requirement, that "a patent is not a hunting license. It is not a reward for the search, but compensation for its successful conclusion.") Tossing out the mere germ of an idea does not constitute enabling disclosure. While every aspect of a generic claim certainly need not have been carried out by an inventor, or exemplified in the specification, reasonable detail must be provided in order to enable members of the public to understand and carry out the invention." The skilled artisan

cannot envision the detailed structure of the encompassed HSP complexes and therefore conception is not achieved until reduction to practice has occurred, regardless of the complexity or simplicity of the method of isolation. Adequate written description requires more than a mere statement that it is part of the invention and a reference to a potential method of isolating it. The HSP complexes themselves are required, i.e., from fungi, protozoa other than *T.cruzi*, etc.. Additionally, challenge experiments demonstrating their efficacy from a representative number of different species is required. It is unclear that the fungi, protozoa and parasites would form the same type of complexes, being that they are very different organisms. Additionally, the claims are drawn to 'vaccines'. The prior art teaches that "it is well understood that the ability of an antigen to stimulate antibody production does not necessarily correlate with the ability of the antigen to stimulate an immune response capable of protecting an animal from infection, particularly in the case of parasitic helminthes. See US Patent 6,248,329, column 1, lines 35-45. The specification is non-enabling, since one skilled in the art would not be able to make and use vaccines other than those comprising bacterial derived HSPs without undue experimentation.

Response to Applicants' Arguments:

Applicants argue that it is not that experiment would be necessary for the broader scope, e.g., parasites, protozoa and fungi, but that it would not be undue experimentation. Applicants argue that HSPs form a family of highly conserved proteins widely distributed throughout the plant and animal kingdom and would preserve the function. They argue that the same methods used in bacteria would work for fungi,

protozoa and parasites. This has been fully and carefully considered but is not deemed persuasive. It is agreed that HSP were well known in the prior art. However, Applicant is arguing that they unexpectedly found that the HSPs obtained from heat stimuli and extraction formed a complex with other antigenic peptides. It is these complexes which Applicant claims are novel. It is unclear that the fungi, protozoa and parasites would form the same type of complexes, being that they are very different organisms. Additionally, the claims are drawn to 'vaccines'. The prior art teaches that "it is well understood that the ability of an antigen to stimulate antibody production does not necessarily correlate with the ability of the antigen to stimulate an immune response capable of protecting an animal from infection, particularly in the case of parasitic helminthes. See US Patent 6,248,329, column 1, lines 35-45. Genentech Inc. v. Novo Nordisk A/S (CAFC) 42 USPQ2d 1001 clearly states: "Patent protection is granted in return for an enabling disclosure of an invention, not for vague intimations of general ideas that may or may not be workable. See Brenner v. Manson, 383 U.S. 519, 536, 148 USPQ 689, 696 (1966) (stating, in context of the utility requirement, that "a patent is not a hunting license. It is not a reward for the search, but compensation for its successful conclusion.") Tossing out the mere germ of an idea does not constitute enabling disclosure. While every aspect of a generic claim certainly need not have been carried out by an inventor, or exemplified in the specification, reasonable detail must be provided in order to enable members of the public to understand and carry out the invention." The showing of the bacterial HSP complexes is not sufficient to broadly

enable any HSP complex from any protozoa, fungi or parasite, particularly when it has not been demonstrated that these complexes are formed in these organisms.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

5. Claims 10, 11 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Laminet et al (EMBO Journal. 1990. 9(7): 2315-2319).

Laminet et al teach the isolated E.coli heat shock protein complex GroEL/ES. See abstract. The vaccine of claim 10 only contains a heat shock protein complex (comprising the HSP and associated peptide) from heat treatment of an extracellular pathogen. Applicants have defined *E.coli* as an extracellular pathogen in their

Examples section. This GroEL/ES complex is identical to the claimed vaccine. The term "vaccine" is an intended use only. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. A "an aqueous composition" reads on water and therefore would be inherent in the preparation of the HSP complexes. With respect to claim 11, the HSP complex disclosed by Laminet is identical to one produced/isolated by the method referred to in claim 11. "The patentability of a product does not depend upon its method of production. If the product in [a] product-by-process claim is the same as or obvious from a product of the prior art, [then] the claim is unpatentable even though the prior [art] product was made by a different process." In re Thorpe, 227 USPQ 964, 966 (Fed. Cir. 1985) (citations omitted). Once the examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. In re Marosi, 218 USPQ 289, 292 (Fed. Cir. 1983).

Response to Applicants' Arguments:

Applicants argue that Laminet does not disclose that their HSP complexes are immunogenic or that they can be used in a vaccine. Applicants further argue that the HSP will form a complex with a peptide in its capacity as a chaperone, but does not provide teaching or function following heat stimulus. These arguments have been fully

and carefully considered but are not deemed persuasive. GroEL/ES is a *heat-shock-protein* complex. A heat-shock protein by definition is a protein produced in response to stress, e.g., heat. This GroEL/ES complex is identical to the claimed vaccine. The term "vaccine" is an intended use only. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. A "an aqueous composition" reads on water and therefore would be inherent in the preparation of the HSP complexes. With respect to claim 11, the patentability of a product does not depend upon its method of production. If the product in [a] product-by-process claim is the same as or obvious from a product of the prior art, [then] the claim is unpatentable even though the prior [art] product was made by a different process." In re Thorpe, 227 USPQ 964, 966 (Fed. Cir. 1985) (citations omitted). Once the examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. In re Marosi, 218 USPQ 289, 292 (Fed. Cir. 1983).

292 (Fed. Cir. 1983).

6. Claims 10-14 are rejected under 35 U.S.C. 102(e) as being anticipated by Srivastava (US 5,961,979).

Srivastava teach compositions and methods of administration using an effective amount of a complex consisting essentially of a heat shock protein (hsp) noncovalently bound to an antigenic molecule. See Column 6, lines 16-25. The complexes can be found in all prokaryotes and eukaryotes, see column 5, lines 55-57. Column 5, lines 19-20, teach that the peptides which are capable of inducing an immune response in a mammal are preferably non-covalently associated with the heat shock stress protein. Strivastava has defined 'intracellular pathogen". to mean "any viable organism, including, but not limited to viruses, bacteria, fungi, protozoa and intracellular parasites...". Further, the Patent defines "Mycobacteria sp.", mycoplasma, and trypansoma" as intracellular bacteria. See Column 12, lines 40-50 and Column 6, lines 65-Column 7, line 6, of US Patent Nos. 5,961,979. "Mycobacteria, mycoplasm and trypansoma are listed as some of Applicant's preferred embodiments of 'extracellular pathogenic organisms" which is contradictory to the definition in US Patent No. 5,961,979. Accordingly, Strivastava's compositions anticipate the instant claims as their intracellular pathogens "Mycobacteria, mycoplasm and trypansoma" are some of Applicants preferred 'extracellular pathogens" and *Mycobacterium bovis* is even used in Applicants' Example sections which demonstrate the claimed invention. Column 22, lines 49-67, teach that the vaccines may be mixed with physiologically acceptable carriers, excipients, or stabilizers and if it is water soluble may be formulated in a appropriate buffer, i.e., an aqueous composition. The use of adjuvants is taught in column 23, lines 20-27. With respect to claim 11, the HSP complex disclosed by Srivastava is identical to one produced/isolated by the method referred to in claim 11.

"The patentability of a product does not depend upon its method of production. If the product in [a] product-by-process claim is the same as or obvious from a product of the prior art, [then] the claim is unpatentable even though the prior [art] product was made by a different process." In re Thorpe, 227 USPQ 964, 966 (Fed. Cir. 1985) (citations omitted). Once the examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. In re Marosi, 218 USPQ 289, 292 (Fed. Cir. 1983).

Response to Applicant's arguments:

Applicants argue that Srivastava teaches HSP/antigen complexes which are formed in mammalian cells and are not derived from extracellular pathogens. This has been fully and carefully considered but is not deemed persuasive. Although the Patent defines "Mycobacteria sp.", mycoplasma, and trypansoma" as intracellular bacteria (column 12, lines 40-50 and Column 6, lines 65-Column 7, line 6, of US Patent Nos. 5,961,979), mycobacteria, mycoplasm and trypansoma are listed as some of Applicant's preferred embodiments of 'extracellular pathogenic organisms which is contradictory to the definition in US Patent No. 5,961,979. Accordingly, Strivastava's compositions anticipate the instant claims as their intracellular pathogens "Mycobacteria, mycoplasm and trypansoma" are some of Applicants preferred 'extracellular pathogens" and *Mycobacterium bovis* is even used in Applicants' Example sections which demonstrate the claimed invention.

7. Claims 10, 11 and 13 are rejected under 35 U.S.C. 102(e) as being anticipated by Wallen et al (US 5,747,332).

Wallen et al teach methods for purifying and synthesizing heat shock protein complexes, in which heat shock proteins are associated with peptides, polypeptides, denatured proteins or antigens. See abstract and column 1, lines 63-66. The reference teaches that each of the heat shock protein complexes consists of a heat shock protein (HSP) that is bound tightly to an incomplete protein in a cell. See column 2, lines 38-43. Column 3, lines 49-67, teach that the heat shock proteins may be from prokaryotes, and include the GroEl/GroEs complexes. Column 4, lines 2-4, teach that the complexes may be used as vaccines. The term "vaccine" is an intended use only. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. A "an aqueous composition" reads on water and therefore would be inherent in the preparation of the HSP complexes. With respect to claim 11, the HSP complex disclosed by Wallen is identical to one produced/isolated by the method referred to in claim 11. "The patentability of a product does not depend upon its method of production. If the product in [a] product-by-process claim is the same as or obvious from a product of the prior art, [then] the claim is unpatentable even though the prior [art] product was made by a different process." In re Thorpe, 227 USPQ 964, 966 (Fed. Cir. 1985) (citations omitted). Once the examiner provides a rationale tending to show that the claimed product appears to be the same or similar to

that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. In re Marosi, 218 USPQ 289, 292 (Fed. Cir. 1983).

Response to Applicant's arguments:

Applicants agree that Wallen teaches that HSP-peptide complexes appear to work as vaccines. However, they argue that Wallen is not primarily concerned with their function but considers improved ways to purify HSPs together with their associated peptide. Applicants argue that Wallen does not mention stress protein induction. They argue that there is a benefit over stress protein induction versus other means of isolating. These arguments have been fully and carefully considered but are not deemed persuasive. The product taught by Wallen is identical to that which is instantly claimed, regardless of the method of production. "The patentability of a product does not depend upon its method of production. If the product in [a] product-by-process claim is the same as or obvious from a product of the prior art, [then] the claim is unpatentable even though the prior [art] product was made by a different process." In re Thorpe, 227 USPQ 964, 966 (Fed. Cir. 1985) (citations omitted). Once the examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. In re Marosi, 218 USPQ 289, 292 (Fed. Cir. 1983). Applicants have demonstrated that their HSP-complexes work

better than HSP alone. Wallen teaches the HSP-complex (with associated peptide). Wallen even teaches that the antigenicity of the heat shock proteins appears to come from the associated peptides and not the heat shock protein itself. They teach that other isolation methods tended to isolate the heat shock protein by itself and that other methods which purified the heat shock protein with their associated proteins were complicated and expensive. Accordingly, the compositions taught by Wallen would inherently possess the same function as they are structurally identical to those instantly claimed.

8. Claims 10-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Hamel et al (WO 96/40928).

Hamel et al discloses heat-shock proteins of the extracellular pathogens *S.pneumoniae, S.pyogenes,* and *S.agalactiae* (see page 6, line 36-page 7, line 14). It is taught that these proteins may be used as vaccines against said pathogens and may be obtained of natural origin, i.e., extracted after heat treatment at 45C, (see page 15, lines 20-33; page 20, lines 13-21; page 34, line 35-page 36, line 5 and Example 10). The vaccines may be used in methods for treating animals against *Streptococcus* infection. The procedure for isolation of the heat shock proteins taught by Hamel are identical to that disclosed in the method from which applicant's claim 11 depends (claim 1). Use of the open language "comprising" in claim 1 allows for the inclusion of additional steps/reagents. Accordingly, the heat shock proteins isolated by Hamel would inherently lead to the isolation of stress/antigenic peptide fragment complexes. Heat shock proteins were naturally associated with peptide fragments. Hamel teaches that

the vaccines may comprise pharmaceutically acceptable excipients, i.e., aqueous compositions, or adjuvants. With respect to newly amended claim 11, "The patentability of a product does not depend upon its method of production. If the product in [a] product-by-process claim is the same as or obvious from a product of the prior art, [then] the claim is unpatentable even though the prior [art] product was made by a different process." In re Thorpe, 227 USPQ 964, 966 (Fed. Cir. 1985) (citations omitted). Once the examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. In re Marosi, 218 USPQ 289, 292 (Fed. Cir. 1983).

Response to Applicants' arguments:

Applicants argue that Hamel teach recombinant heat shock protein molecules. They also argue that the heat used would cause the peptides to disassociate from the heat shock protein. This has been fully and carefully considered but is not deemed persuasive. It is taught that these proteins, which are naturally occurring proteins that exhibit preferential transcription during heat conditions, may be used as vaccines against said pathogens and may be obtained of natural origin, i.e., extracted after heat treatment at 45C, (see page 15, lines 20-33; page 20, lines 13-21; page 34, line 35-page 36, line 5 and Example 10). The procedure used for preparing the heat-induced immunogens is very similar to the procedure disclosed in the instant application. It is thus considered that this procedure would also lead to the isolation of stress

protein/antigenic peptide complexes. The fact that the immune responses measured in the experimental section were limited to hsp does not prove that the complexes were absent from the preparation of the hsp molecules.

9. Applicant's arguments regarding the Restriction Requirement were previously addressed in the Office Action mailed 5/27/04.

Claims 10, 11, 13 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Ferrero et al (Proc. Natl. Acad. Sci. 1995. 92: 6499-6503) is withdrawn since the product taught by Ferrero was recombinantly reproduced and was not a naturally extracted complex from a heat treated organism.

Claims 10-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Labigne et al (WO 95/14093) is withdrawn because the heat shock protein of Labigne is added separately to an immunogenic composition comprising an immunogenic peptide. The peptide in the composition taught by Labigne is not one which is naturally obtained and associated with a heat shock protein obtained from heat treatment.

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. Correspondence regarding this application should be directed to Group Art Unit 1645. Papers related to this application may be submitted to Group 1600 by facsimile transmission. Papers should be faxed to Group 1600 via the PTO Fax Center located in Remsen. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15,1989). The Group 1645 Fax number is 571-273-8300 which is able to receive transmissions 24 hours/day, 7 days/week.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer E. Graser whose telephone number is (571) 272-0858. The examiner can normally be reached on Monday-Friday from 7:00 AM-4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynette Smith, can be reached on (571) 272-0864.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (571) 272-0500.

Jennifer Graser
Primary Examiner
Art Unit 1645

2/11/09